

30. (New) A method for producing a discharge lamp with electrodes formed by the steps of:

a winding step for winding, with the same pitch, refractory metal wires around a core member and forming n layers of coils one by one, n being larger than one;

a shape stabilizing step for stabilizing a shape of the n number of layers of coils;

a cutting step for cutting the formed n layers of coils and the core member to provide a flat tip surface;

a removing step for removing the core member after the cutting step;

a rod inserting step for inserting an electrode rod into a space from which the core member has been removed, the electrode rod being made of refractory metal;

a welding step for fixing the formed n layers of coils to the inserted electrode rod; and

a fixing step for mounting a pair of identical electrodes within a light emitting tube so that tips of the electrodes are spaced a length less than 2.5 mm from each other.

31. (New) The method of claim 30, wherein the length is approximately 0.6 mm.

32. (New) The method of claim 32

wherein the n layers include a $(p-1)$ th layer, a p th layer, and $(p+1)$ th layer, which are formed by refractory metal wires with diameters of $P-1$, P , and $P+1$ respectively, p satisfying an inequality $1 < p < n$, inequalities $p < p-1$ and $p < p+1$ being satisfied, and

wherein the three refractory metal wires are wound to form spaces that are each surrounded by (a) the $(p-1)$ th layer (b) adjacent turns in a coil of the p th layer, and (c) the $(p+1)$ layer.